Education Efforts for the PPTG

How to share our knowledge and experience with others.

PPTG Charter

- Task Group Objective
  - Promote and sponsor training and educational seminars, workshops and courses.

Education Group Tasks

- Determine training needs
- Identify available training/education programs
- Sponsor/promote sessions in California
- Develop communication pipeline

Determine Training Needs

- PPTG Needs
- Planning / Programming
- Pavement Management System
- Processes/Products
  - Traditional
  - New innovations

Determine Needs (cont)

- Audience
  - Managers
  - Engineers
  - Inspectors
  - Contractors
  - Material Suppliers

Identify Available Programs

- NHI
- Caltrans
- ITS
- Industry

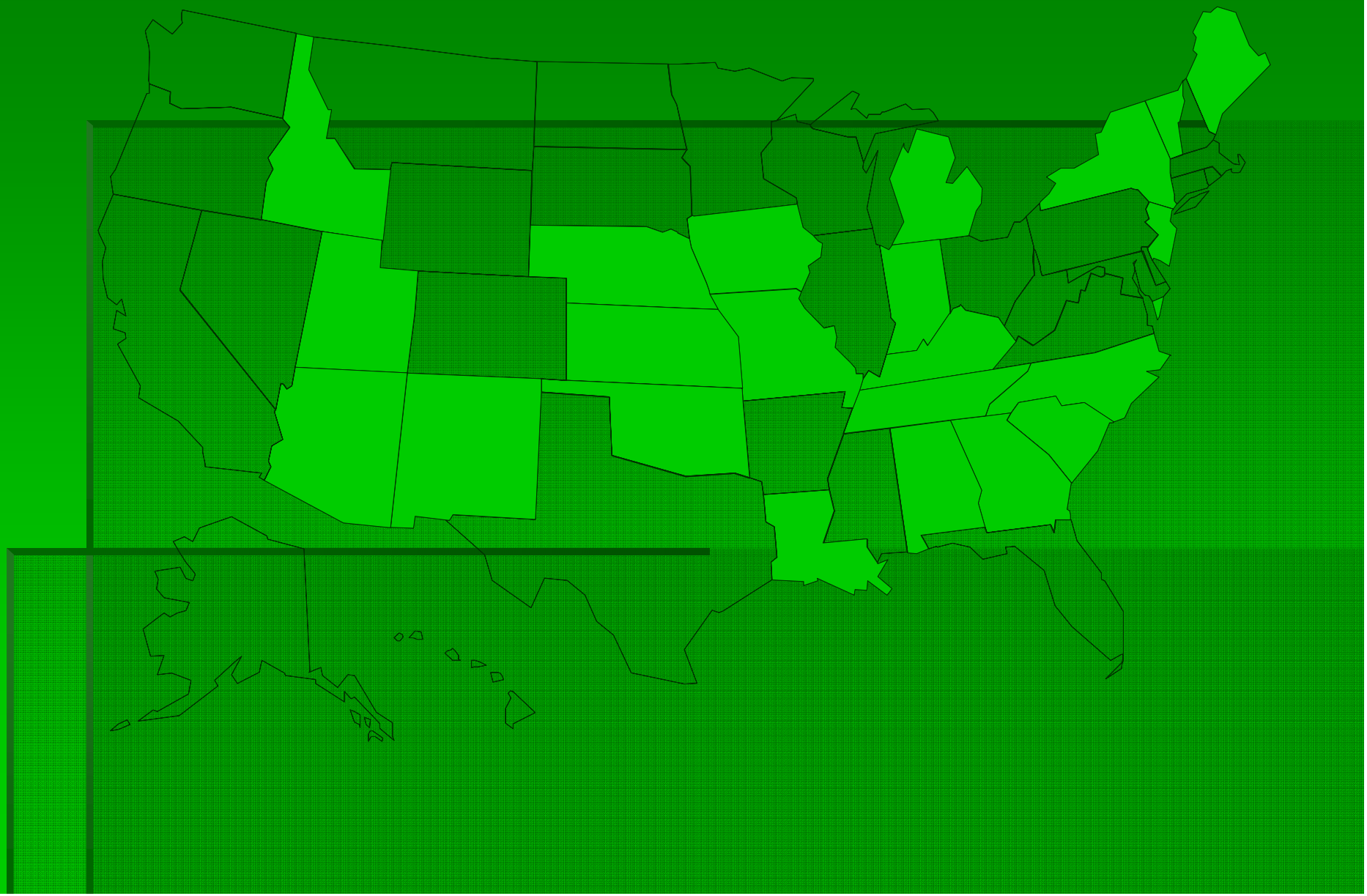
Preventive Maintenance Training

NHI Pavement Preservation Course Status

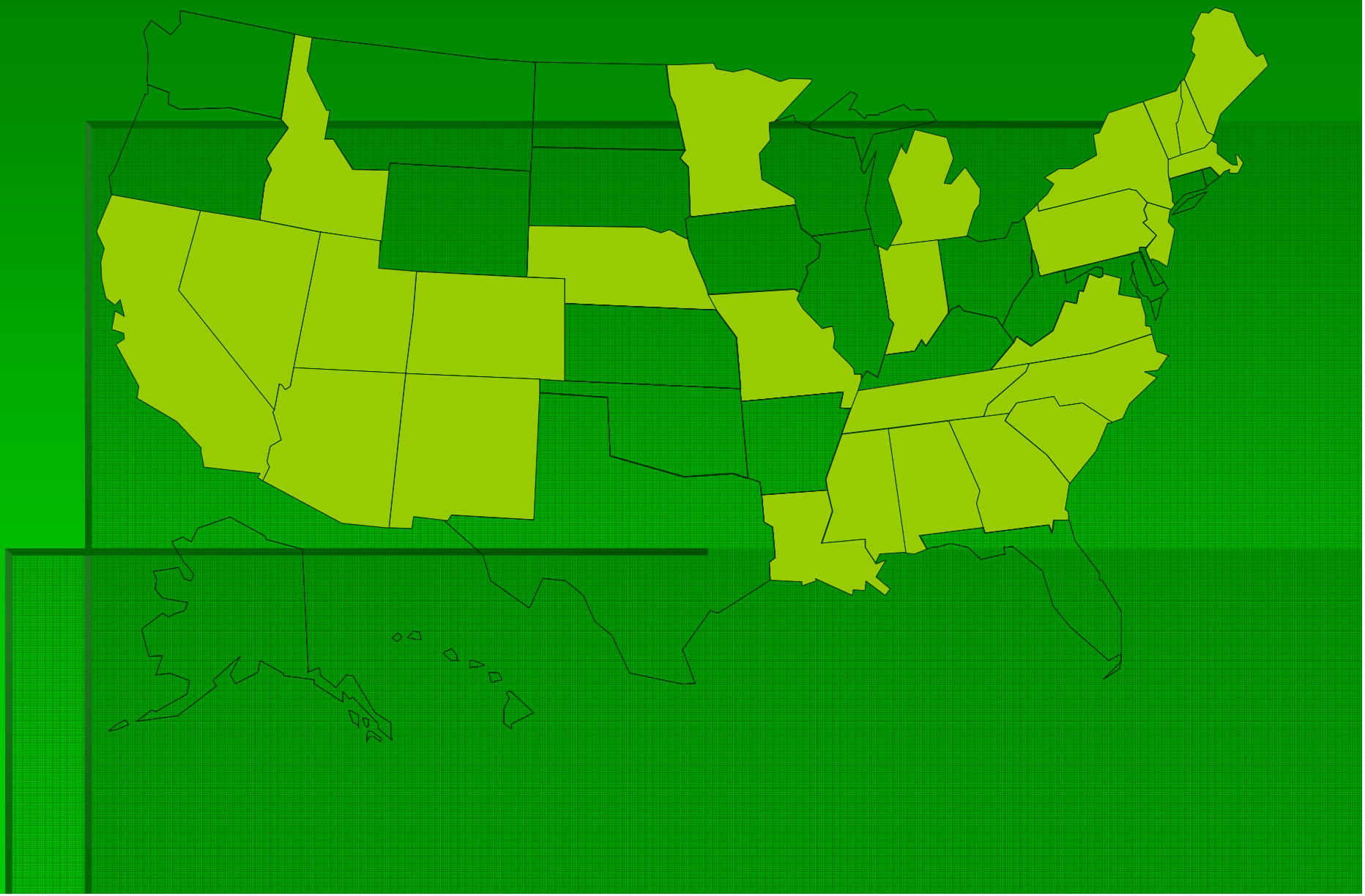
- Course 1: The Preventive Maintenance Concept
- Course 2: Selecting Pavements for Preventive Maintenance
- Course 3: Design and Construction of Quality Preventive Maintenance Treatments (completed, but not released)
- Course 4: Integrating Preventive Maintenance into Pavement Management Systems

http://www.nhi.fhwa.dot.gov

Preventive Maintenance Concept presentations



Selecting Pavements for Preventive Maintenance



Focus, Content, and Audience

- PM 1: Components and Implementation
- PM 2: Guidance on Selection
- PM 3: Techniques and Materials
- PM 4: Integration of Pavement Preservation and Pavement Management

Course 1: The Preventive Maintenance Concept

- The Physical Stuff
  - Reference Manual
  - Participant's Workbook
  - Slides
- The Presentation
  - Modules
  - Workshops
  - Executive Summary

Workshops

- Defining PM goals
- Identifying PM strategies
- Demonstrating the importance of PM to management

Executive Summary

- 1.5-hour summary
- Targeted at upper management and others who can affect program decisions

Summary of State Practices

- Wide variation
- Most preventive maintenance treatments used in band-aid application
- Dedicated funding a challenge
- Working toward outcomes, not objectives

Preaching to the choir?

Course 3: Design and Construction of Quality Preventive Maintenance Treatments

- Crack filling and sealing
- Surface treatments
- Slurry systems
- Recycling
- Thin and ultrathin overlays

Course 3: Design and Construction of Quality Preventive Maintenance Treatments (cont.)

- Joint and crack sealing
- Grinding and grooving
- Full-depth repairs
- Partial-depth repairs
- Load transfer restoration
- Thin PCC overlays
- Undersealing

Course 3 Content

- Material selection
- Mix design
- Construction
- Quality control
- Troubleshooting

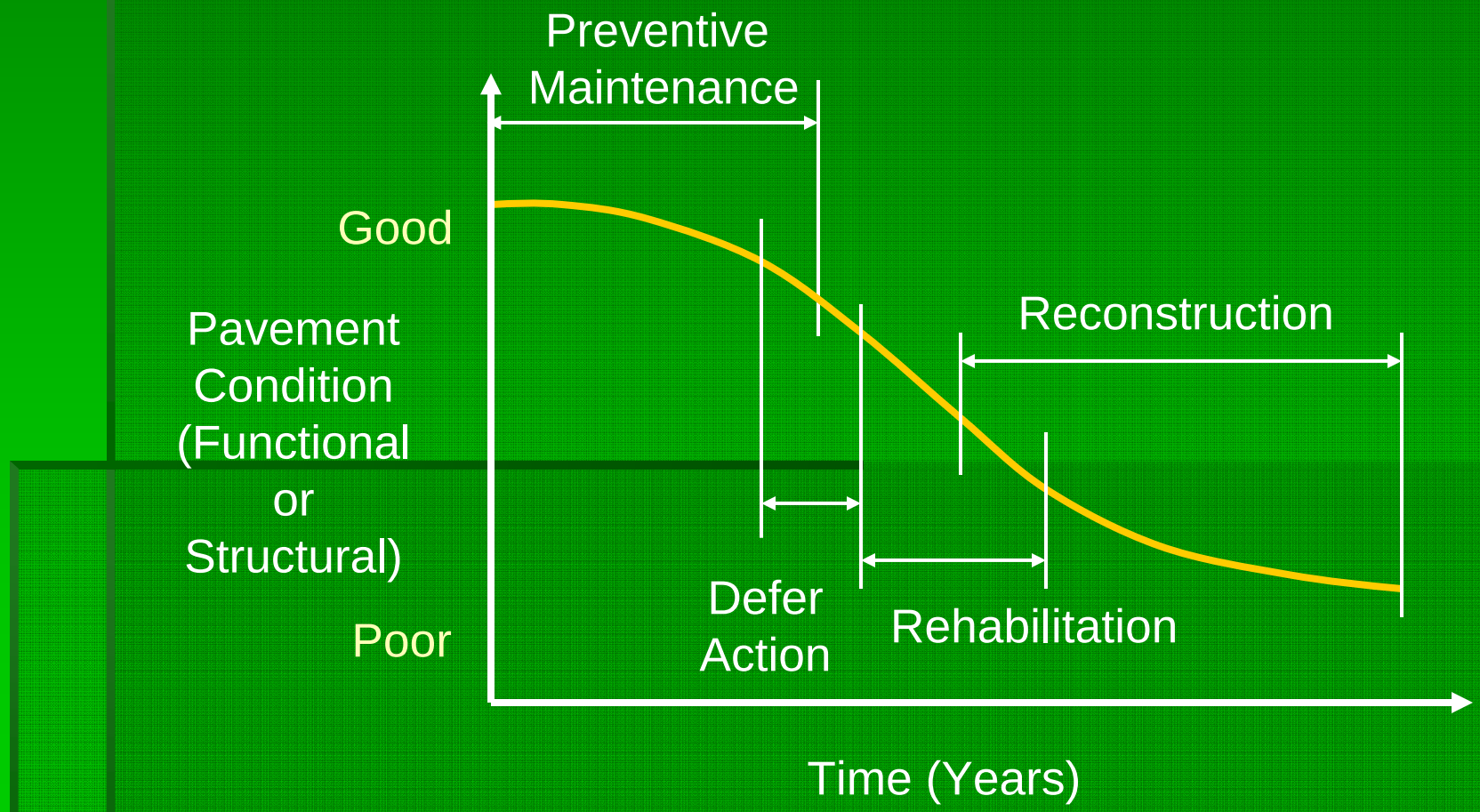
Course 3 Development

- Technical panel
- Industry materials
- Industry training
- NHI training
- Videos
- Timetable

Course 2: Treatment Timing and Project Selection

- Currently most commonly requested training
- Conceptual material can be customized for agency
- Material presented to Caltrans as a pilot

When should preventive maintenance be applied?



What determines appropriate timing?

- Montana, South Dakota, others: age (based on experience)
- Ohio, others: condition

Determining if a project is a "good candidate" for PM

- No structural failures
- Minimal distress (extent and severity)
- Relatively young in age
- Few historical problems with similar projects

Estimate pavement condition and future performance!

How do you determine a pavement's *true condition*?

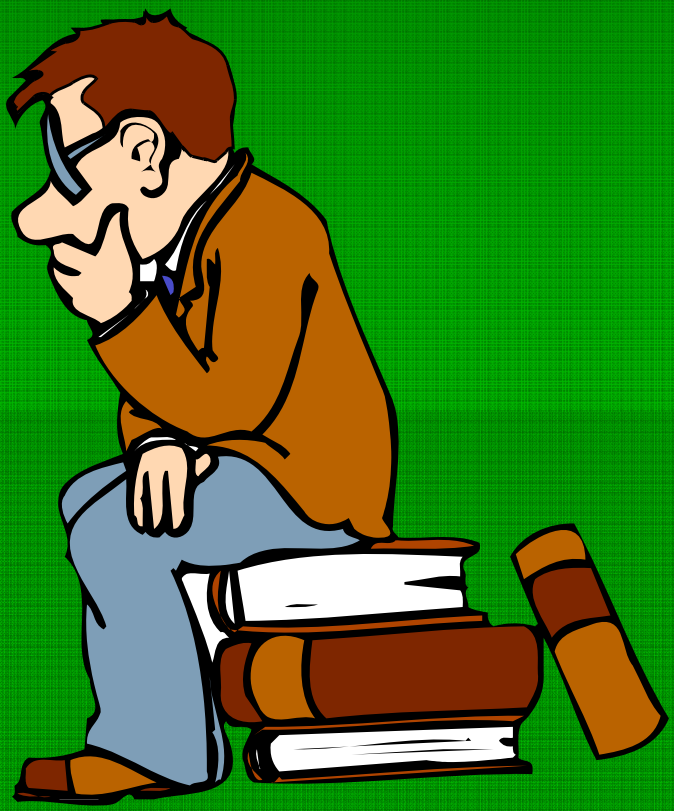
- Conduct surveys
  - Type, amount, and severity of distress/deficiencies
  - Identify *poor* PM candidates
- Additional information / historical records
- Engineering judgment

HMA Pavement Deterioration

Catalysts of Deterioration

- Traffic
- Environment / Aging
- Material problems
- Water infiltration

How can the application of preventive maintenance treatments influence the typical pavement deterioration progression?



How is PM used to preserve the investment?

- Keep water out!
  - Reduce infiltration
  - Maintain drainage
- Reduce debris infiltration into joints or cracks
- Slow aging effects of bituminous pavements
- Minimize dynamic loads

How is PM used to maintain LOS for the pavement surface?

- Maintain good rideability
- Maintain good surface friction
- Minimize additional dangerous surface characteristics
  - Edge drop-off
  - Rutting (hydroplaning)

Specific Results of PM Treatment Applications

- *Prevent or slow* some distresses from occurring
- *Correct* some (mostly minor) surface deterioration

HMA Problems *Prevented or Slowed* with PM Treatments

- Loss of fines (pumping)
- Crack deterioration
- Block cracking
- Edge cracking
- Potholes
- Weathering/raveling
- Roughness

HMA Problems *Corrected* with PM Treatments

- Non subgrade softening rutting
- Raveling
- Bleeding/flushing
- Surface friction loss
- Roughness

When is it too late?

- Potholes
- Severely deteriorated cracks
- Delamination
- Unstable rutting
- Others?

State & Local Courses

- Caltrans
- UC Berkeley – ITS
- Industry Sponsored Seminars

Sponsor/Promote Programs

- Increase awareness of classes being offered in California
- Sponsor classes from available sources
- Develop classes for unmet needs
- Support Development of ITS' *Technical Topics* for pavement preservation
- Sponsor Annual Pavement Preservation Seminar

Develop Communications

- E-newsletters to PPTG members
- Flyers to target audience
  - Industry associations
  - Caltrans personnel
  - Agency personnel
    - MSA, APWA, ASCE, CEAC, DLAE
- Website calendars

July 2005: NHI Course

- Integrating Pavement Preservation in Pavement Management
  - Target: Pavement management engineers, maintenance engineers, and planners/programmers from agencies and consulting firms
  - July 26-27; Sacramento, CA

Thank You!

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